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ABSTRACT

This study compares interactions between infants and parents to interactions between infants and strangers. Infants from 2 weeks to 6 months of age were taped in face-to-face interactions with unfamiliar male and female adults. Tapes of parent-infant interactions were available from a prior study. Specific infant and adult behaviors were coded and recorded from these tapes. The adult behavior variables recorded included gaze direction, body position, touch pattern, facial expression, movement and vocalization. Infant variables were gaze direction, facial expression, movement and vocalization. The organization of these behaviors was further defined by a phase anlaysis. The phases studied included avoid/protest, avert, monitor, elicit, set, play and talk. Analysis of the specific behaviors and phases indicated significant differences between infant-parent and infant-stranger interactions. Interactions between infants and strangers revealed a lack of synchrony and a lack of accommodation of behaviors between the partners. Phase analysis indicated predominantly neutral and negative phases during the infant-stranger interactions. Results suggested that infant social interactions at these age levels are neither random nor indiscriminate but are highly specific to the behavior setting. (BD)

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A COMPARISON OF INFANT INTERACTION WITH STRANGERS AND PARENTS

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The way in which a young child behaves with strangers has been studied by investigators from many different theoretical schools using different tools and observational situations.[1-5] These studies have defined a real continuum of social behavior encompassing aspects of perceptual, cognitive and affective development. Many of these "stranger observations" have focussed on the child from eight month anxiety to eighteen month approach/avoidance behaviors. Today I would like to look at an earlier part of that behavior continuum using the infant-adult face-to-face situation. This will provide some insights into the establishment of early social relationships as well as outline some aspects of the underlying structure of communication between infants and adults. The observations will clearly show that infants' behavior with strangers is neither indiscriminate nor random. A complex and specific organization of infant behavior is apparent in the infant-stranger situation.

Infants two weeks to six months of age and male and female strangers were taped in the manner previously described during the same sessions as the parent oservations reported by Dr. Yogman.[6] The adult order and sex of the stranger was randomly varied. Strangers varied widely in their experience with young infants in general; no stranger interacted with the infant or viewed the parent doing so prior to the taping.

A second by second coding of specific infant and adult behaviors was done in the manner described by Dr. Tronick [7] and specified in a manual. The adult behaviors coded on a four point scale for each behavior included gaze direction, body position, touch patterns, facial expression and vocalization. Infant categories were gaze direction, facial expression, movement and vocalization. These were scored on a three point scale. Three levels

of analysis of these data will be here described.

Firstly, examination of the frequency and duration of the individual infant behaviors reveals differences between the different interactive situations.

- Figure 1 here -

Facial expressions particularly reveal the differences. Infants spend significantly more time smiling with parents (28.9 seconds and 15.9 seconds versus 8.6 seconds for strangers) and for longer durations with mothers (6.5 seconds) than with strangers (4.8 seconds). A trend in the same direction was present for fathers. Infants' smiles were discriminating, although they were present in all interactive situations. Negative faces were more frequent (28.2 seconds for strangers versus 5.3 seconds and 7.8 seconds) and occurred for longer duration (12.9 seconds versus 4.1 and 5.4 seconds for mothers and fathers respectively) with strangers than for either parent. Infants cried or fussed more with strangers than with parents. The specific adult behaviors also reveal differences between parent and stranger patterns. Facial expressions again show significant differences.

- Figure 2 here -

Bright animated play faces were more frequent with mothers (16.9 seconds versus 7.7 seconds and 8.3 seconds). Conversely, frowns and negative faces were significantly more common with strangers than with either fathers or mothers.

Strangers less frequently used imitative "baby talk" speech patterns that is part of verbal games described previously. Indeed, the percent time of stranger silence within the vocalization category was six times greater than either parent (25.3% for stranger versus 4.2% and 4.6% for mothers and fathers respectively). Strangers also tended to touch infants less often than

parents, and these touch patterns were oft abrupt, isolated taps. This level of analysis then does reveal significant differences in the component behaviors of both infants with unfamiliar adults when contrasted with the behaviors seen in the parent interaction. Facial expressions and vocalisations demonstrate the greatest differences.

However, these individual behaviors are really only the building blocks of the interaction. The organization of these components as they occur naturally defines more clearly the sense of the overall message value that characterises the infant-stranger interaction as unique. This level of organization will be looked at next.

The clinical impressions one gets from viewing the stranger interaction is that of "two ships passing in the night" - no real contact or sustained communication is seen. Signals are missed, misread or responded to too vigorously; this exists within both partners. The interaction never really gets going; a real interplay is never established as is shown with parents. The uneasiness that this situation creates is apparent in both partners as each in turn makes parleys to the other to initiate a real exchange.

These impressions of this kind of uneven organization as a whole are more precisely defined by using the phase analysis described in this symposium.[7] This analysis also brings us to the level of organization of the behavior of each of the partners making accommodations to the other.

- Figure 3 here -

Seven phases were defined for each adult and infant second-by-second. The phases are: 1) Avoid/Protest, 2) Avert, 3) Monitor, 4) Elicit, 5) Set, 6)Play, 7) Talk. Each phase was assigned by translation of the behavioral scores

described above and defined by a manual. Each phase is mutually exclusive. These define a continuum of degree of attention to the interaction (Talk and Play to Avert/Protest) and positive to negative affect (Talk and Play to Avert/Protest).

- Figure 4 here -

Figure 4 shows the occurrence of each of these monadic phases for one session of an infant with stranger and mother. The infant phases are on the top; the adult phases below. The more affectively negative or neutral phases, going from left to right, represent a greater portion of the time with the stranger than with the mother. Play and talk phases seen on the right are rarer with the stranger. Infant Play and Talk together account for 47% of the time in the mother interaction; these phases are seen only 16% of the time with stranger. "Avert" occurs almost half the time with the stranger and never with the mother. Infant monitoring, checking of the stranger, is seen three times more commonly with the stranger than with the mother. This reflects the tenuous "watching" that the infant exhibits so characteristically.

The adult monadic phases show a parallel distribution, shown on the lower section of Figure 4. The stranger Monitors almost one-fourth of the time (23%). Play and Talk represent only 27% of the stranger's time, while these phases account for 80% of the mother's time. The stranger spends more time in neutral, set, ready to go, almost one-half of the time. There seems to be little "interactive energy to propel either participant in the stranger interaction into the phases of Play and Talk; sustained interchanges are rarely present. This is a "waiting game" between the two unfamiliars.

The whole tone of the interaction seems to be disjointed, irregular,

rough or mismatched. This non-meshing of signal system in the stranger interaction is illustrative of another level of organization, that of one partner around the other. This level can be examined by looking at the joint temporal occurrence of monadic phases with the infant and the adult dyad together.

- Figure 5 here -

In this figure each box represents the time that the pair spends in matched, near matches or conjoint states, or dissimilar or disjoint states. The frequency of matched states with mother and infant is markedly greater than with strangers (42% versus 17%), i.e. mother and infant are together often. Similarly the occurrence of conjoint or adjacent states is slightly higher with mother than with stranger (56% versus 46%). Conversely the occurrence of disjoint states or mismatches in the stranger interaction much exceeds that with mother, stranger interaction 38% versus 2% mother interaction. Disynchrony of the partners then is a very common occurrence of the stranger interaction and can be clearly defined by this system.

The movement from one dyadic state (conjoint, disjoint or match) to another is another way of looking at the third level of organization of the interaction, i.e. the mutual, fine-tuned accommodation of one partner to another. Our expectation that in the stranger interaction this smooth adjustment is lacking was borne out and is demonstrated by the arrows in the figure. When in matched states, the infant and stranger stay matched only 6% of the time versus 22% for mother. That is, they either do not know a good thing when they see it or have no way of sustaining the match. When conjoint, the mother and the infant fine-tune even further to "Match" 19% of the time while this only occurs 8% of the time in the stranger interaction.

Rapid and sensitive adjustment is lacking. When in disjoint states, which occur 38% of the time versus 2% with mothers, the two "unfamiliars" stay right there, out of synchrony 38% of the time; little mutual accommodation is going on here.

The temporal occurrence of these phases for each mother and infant, stranger and infant set over a session is shown in Figure 6.

- Figure 6 here -

Note again the lack of synchronization, abrupt but unrelated shifts of <u>each</u> partner and the general drop off of phases over the course of the session, going to more negative phases. This pattern differentiates the stranger interaction from that with the mother. The stranger and infant just do not move together.

Film sections will illustrate these findings of differences in specific behaviors, the monadic phase patterns and the accommodation of one partner to another.

The first segment is that of the same infant at the same age who was shown earlier with both mother and father by Dr. Yogman, but now with a stranger. Note the bright greeting by the infant and his initiatives to set up the games in Play and Talk phases as he did with his parents. After these meet with repeated failures, he averts, but turning back periodically to try again. He eventually substitutes object play as part of the aversion. The stranger comes in brightly making several brief attempts to establish contact, not linked to the infant, however. She misreads his cues and mutual accommodation is less sensitive. She interrupts his vocalization thereby cutting them off. She assumes a silent "monitor" as the infant averts. [tape]

The next illustration is of a younger infant with first mother and then

with stranger. Style differences are apparent but the same structure is present; disynchrony and lack of interactive energy are present with this stranger as well. The mother is bright, animated and keenly accommodating to the infant's behavior. The infant's immediate bright face and smile give her much with which to work. The stranger gets less on which to build but does put out brief "play" maneauvers. The infant and stranger "monitor" each other a great deal. Long silences and the stranger's repeated "hellos" clearly outline that nothing really gets going. [Tape]

The next stranger, a young man, demonstrates much "monitor" and "set" phases. Note particularly that his "play" phases are in the forms of taps and shaking hands more characteristic of fathers, but these differ in that they are tentitive, unilateral and abrupt. The infant monitors him almost unrelentingly. The one smile stops quickly after a probable over-reaction. Note again that the infant's monitor phase begins immediately. [Tape]

The final segment is a classic one, "the great uncle syndrome". This young man goes right ahead with a barrage of Play and Talk behavior to draw the infant up to his own highly animated state - his eyebrows and mouth movements are marvelous. The more he does, the more the infant averts, and finally protests. Neither partner accommodates to the other. Each is moving in separate directions. The infant appears immediately suspicious of him and "monitors" for some time. The stranger's "oh, ohs" foreshadow the demise of this "interaction". The stranger's attempts to sustain it are painful to watch. [Tape]

These films and analyses illustrate the real differences that occur in the infant face to face interactions with strangers versus parents. In

summary the findings include:

1) differences in the frequency and duration of component behavioral displays of both adults and infants;

2) distinct distribution of monadic phases of each partner, with neutral to negative phases predominating in the stra_er interaction; little interactive energy is available to propel them into higher states;

3) lack of synchrony and fine-tuned mutual adjustment between partners is seen within the stranger interaction. This is in contrast to the sustained reciprocity of the parent interaction.

These observations extend the continuum of "stranger behavior" back to early infancy. They also highlight active infant participation and behavioral organization in these specific situations. These findings add to our growing appreciation of the sophisticated social capacities of young infants. Infant social interaction even at this early age is neither indiscriminate nor random but is highly specific and organized within the interactive setting.

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Figure 1

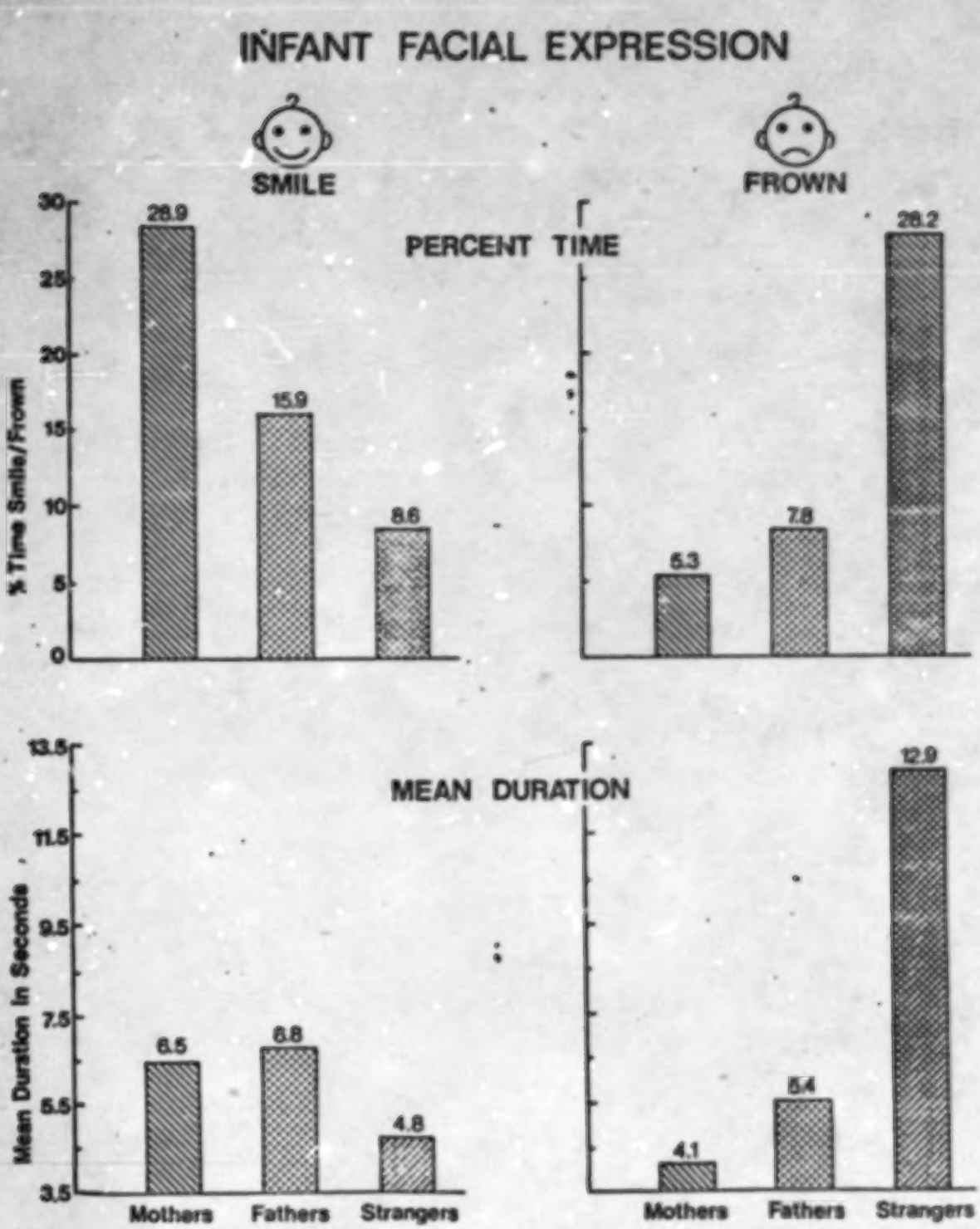


Figure 1

Figure 2

ADULT FACIAL EXPRESSIONS

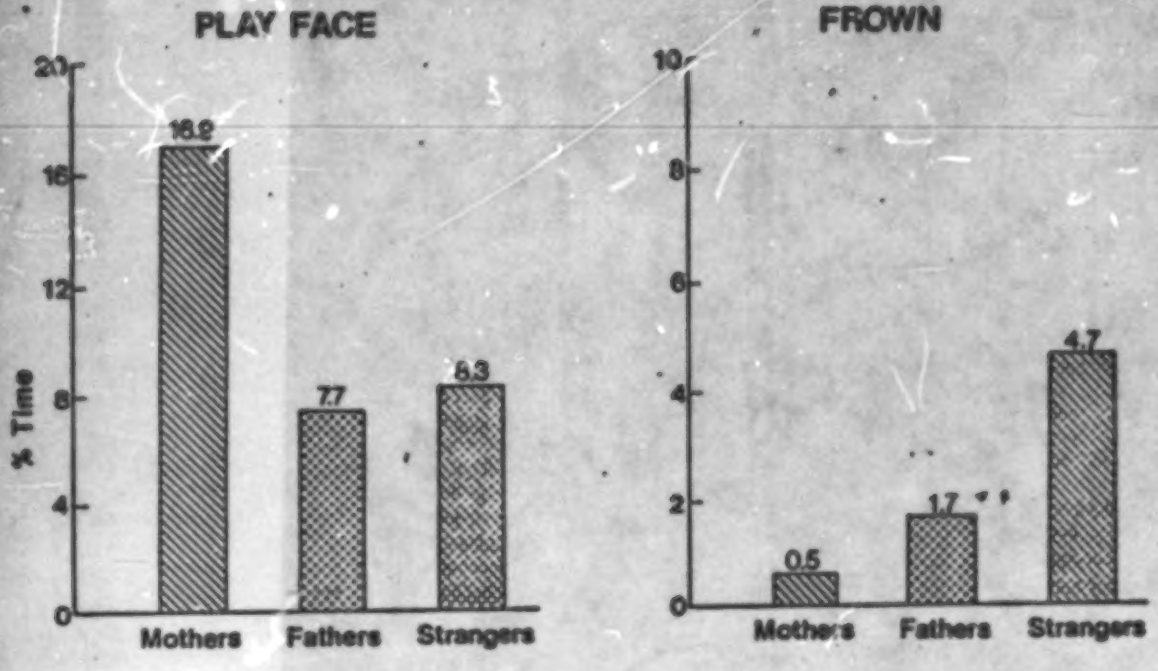


Figure 3

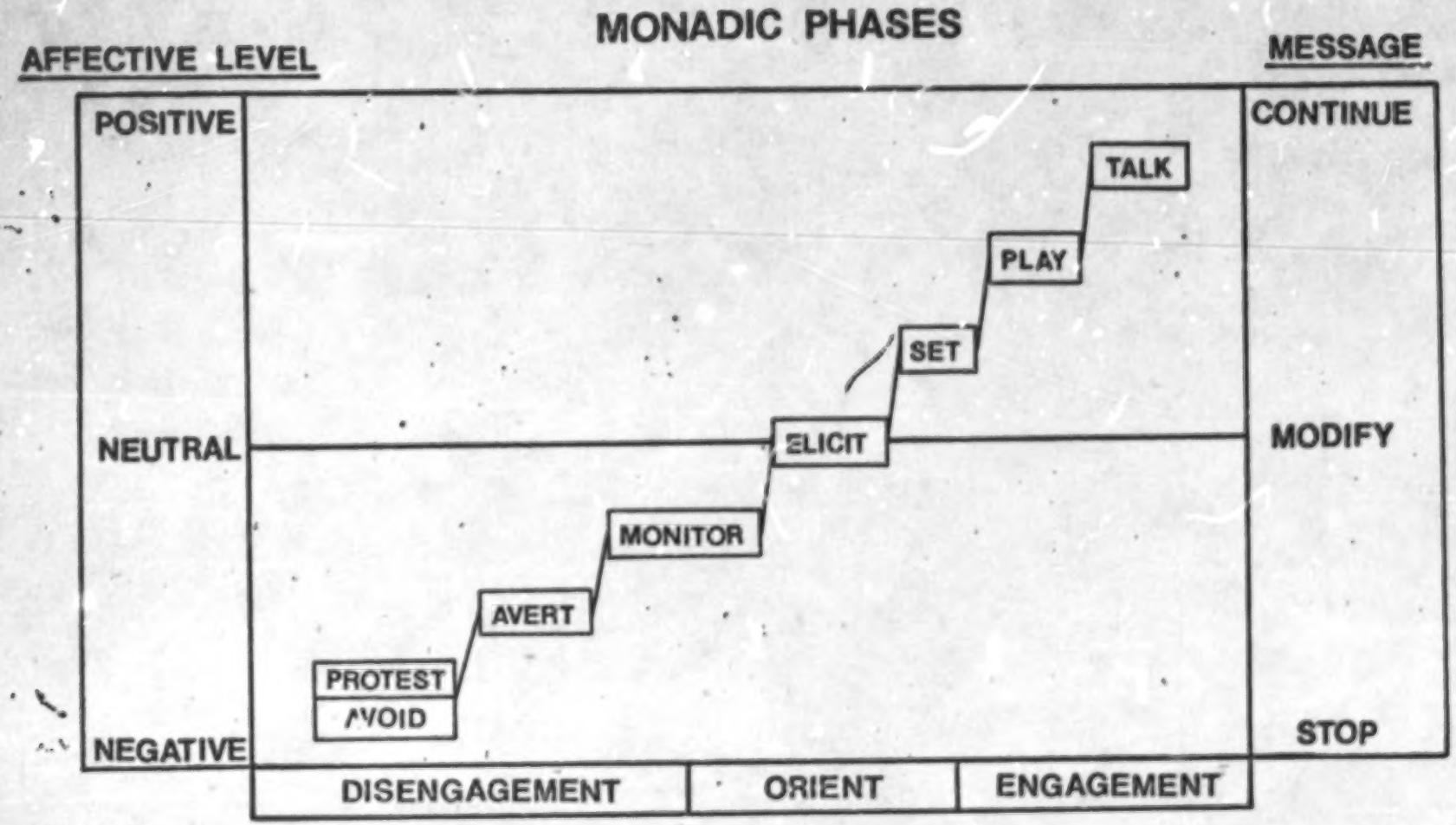
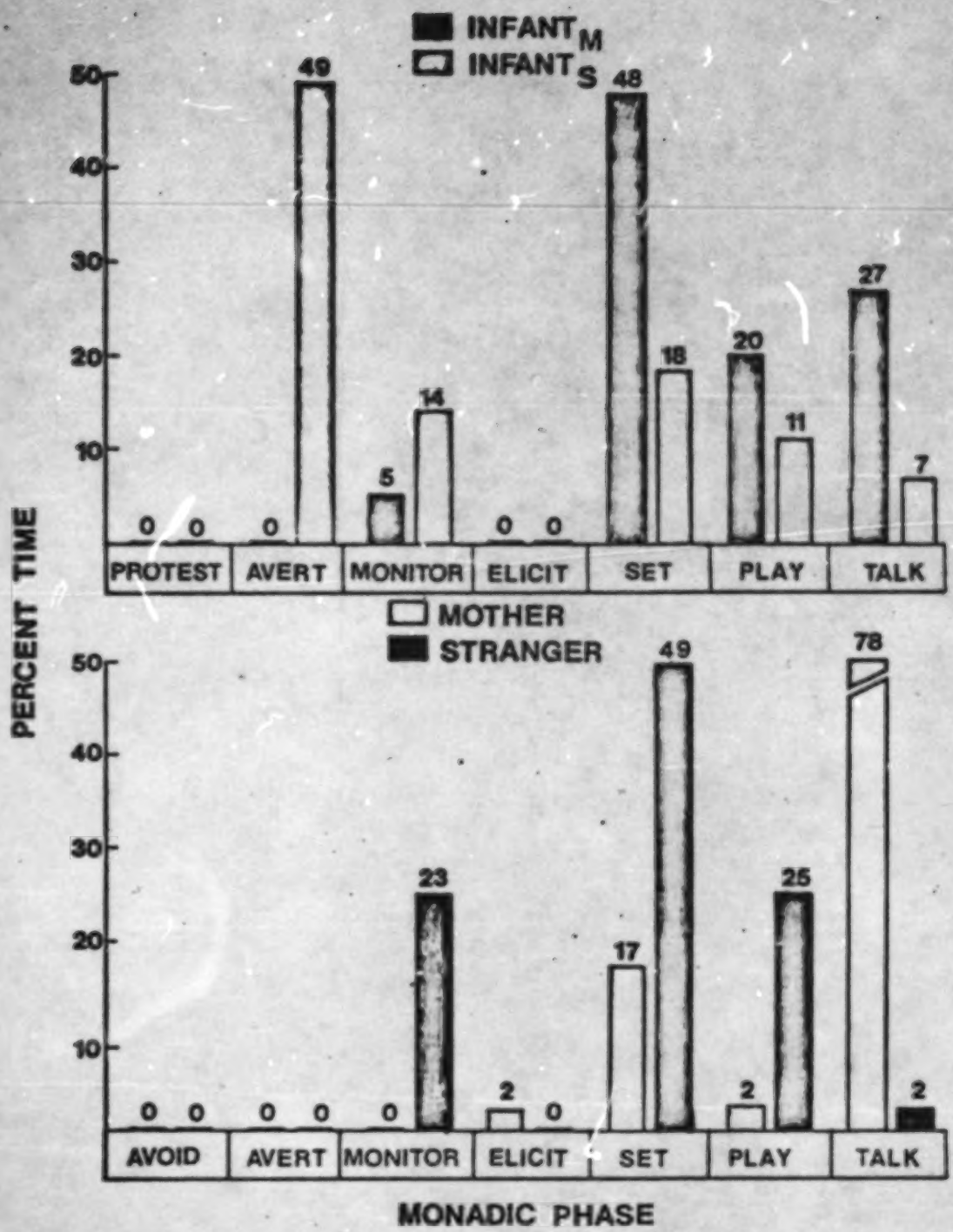

MONADIC PHASES
AFFECTIVE LEVEL
MESSAGE
POSITIVE
NEUTRAL
NEGATIVE
CONTINUE
MODIFY
STOP
TALK
PLAY
SET
ELICIT
MONITOR
AVERT
PROTEST
AVOID
DISENGAGEMENT
ORIENT
ENGAGEMENT

Figure 4


INFANT M
INFANT S
PERCENT TIME
50
40
30
20
10
0 0 0 49 5 14 0 0 48 18 20 11 27 7
PROTEST
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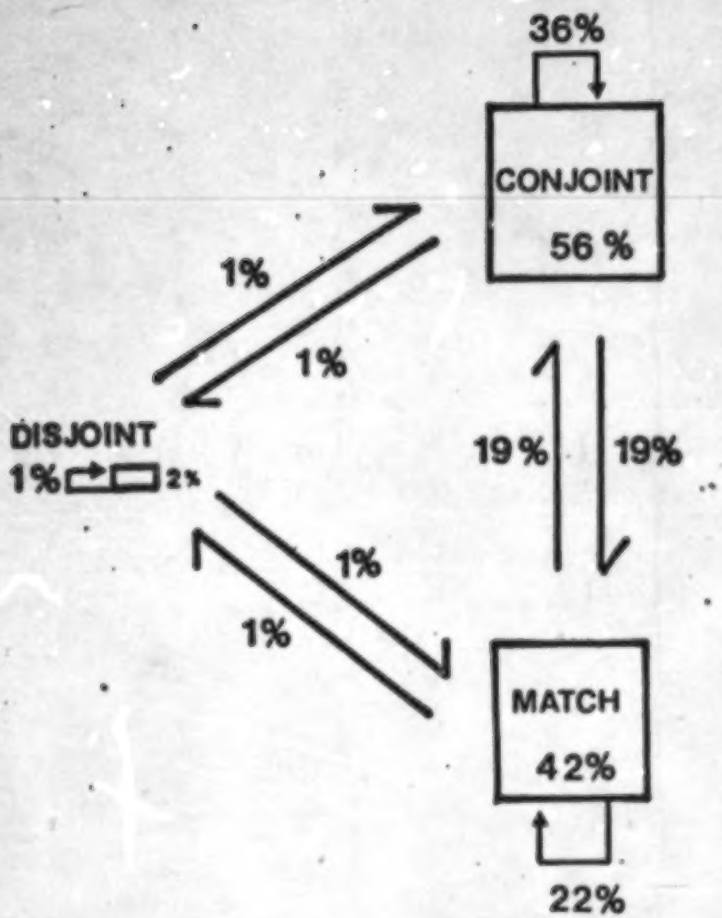
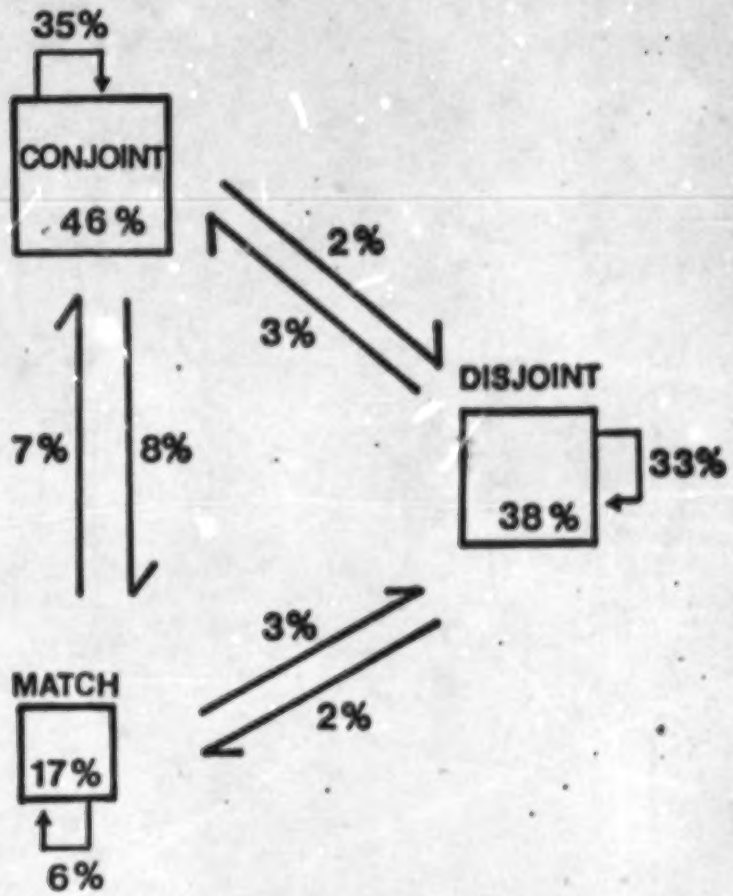
MONITOR
ELICIT
SET
PLAY
TALK
MOTHER
STRANGER
0 0 0 0 0 23 2 0 17 49 2 25 78 2
AVOID
AVERT
MONITOR
ELICIT
SET
PLAY
TALK
MONADIC PHASE

Figure 5

QUALITY AND TRANSITIONS BETWEEN DYADIC STATES

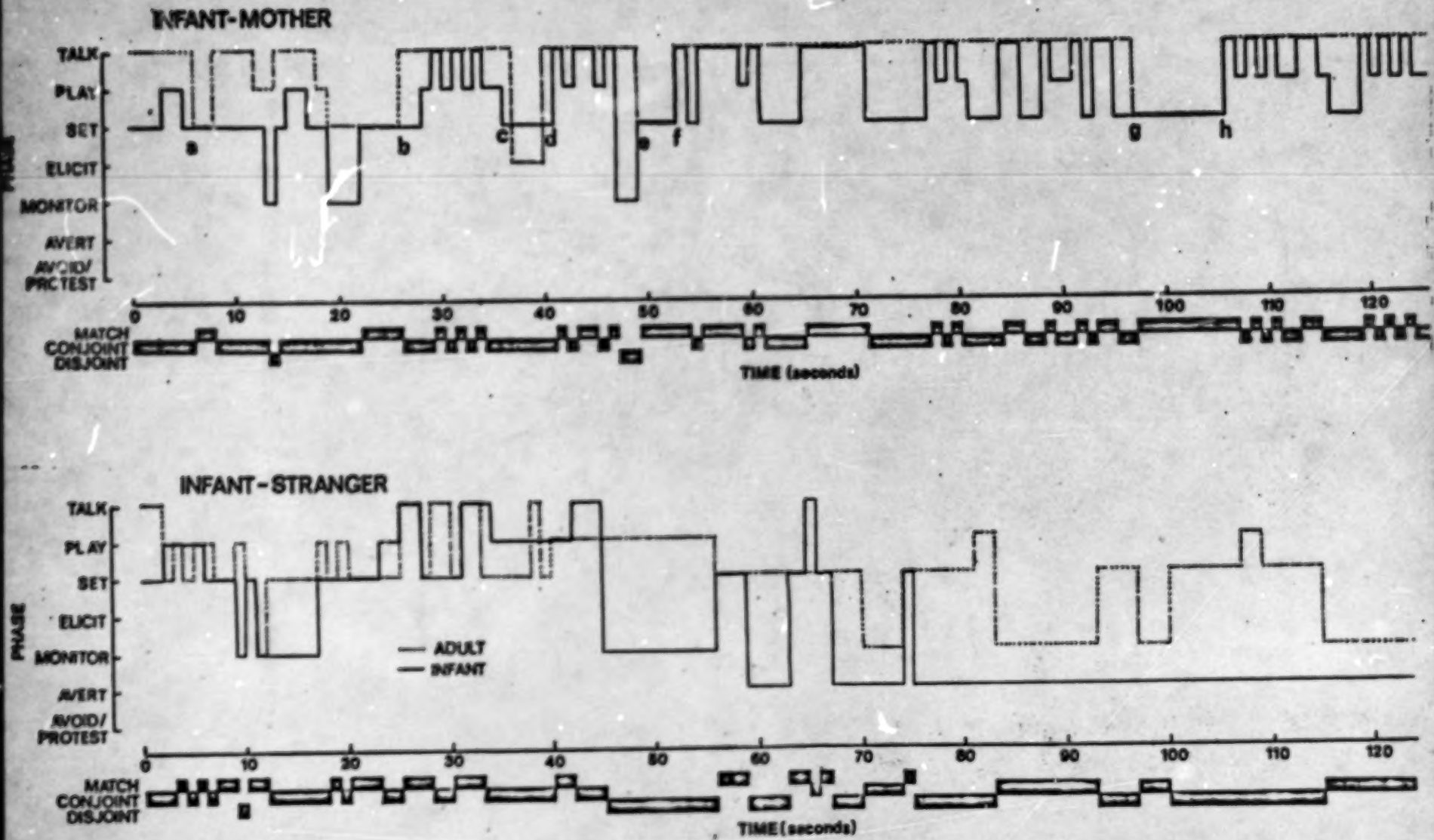


INFANT-MOTHER



INFANT-STRANGER

Figure 6


INFANT-MOTHER
TALK
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110
120
MATCH
CONJOINT
DISJOINT
TIME (seconds)
INFANT-STRANGER
TALK
PLAY
SET
ELICIT
MONITOR
AVERT
AVOID/
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ADULT
INFANT
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MATCH
CONJOINT
DISJOINT
TIME (seconds)